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JUN 26 2001

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A 17

RAW SEQUENCE LISTING

PATENT APPLICATION: US 09/149,721

DATE: 06/06/2001

TIME: 13:57:05

Input Set : A:\Sequence Listing Mumper et al..txt

Output Set: C:\CRF3\06062001\I149721.raw

2 <110> APPLICANT: Mumper, Russ; Tagliaferri, Frank

W--> 3 <120> TITLE OF INVENTION: HYDROPHOBIC GLYCOSYLAMINE DERIVATIVES, COMPOSITIONS, AND METHODS FOR USE

W--> 4 <130> FILE REFERENCE: 237/023

W--> 5 <140> CURRENT APPLICATION NUMBER: US 09/149,721

6 <141> CURRENT FILING DATE: 1998-09-08

7 <150> PRIOR APPLICATION NUMBER: US 60/058,259

8 <151> PRIOR FILING DATE: 1997-09-08

W--> 9 <160> NUMBER OF SEQ ID: 3

10 <170> SOFTWARE: Microsoft Word

W--> 11 <210> SEQ ID NO: 1

12 <211> LENGTH: 462

13 <212> TYPE: DNA

14 <213> ORGANISM: Homo Sapiens

W--> 15 <220> FEATURE:

16 <221> NAME/KEY: CDS

17 <222> LOCATION: (1)...(462)

18 <223> OTHER INFORMATION: Coding sequence of human IL-2

W--> 19 <400> SEQUENCE: 1

20	atg tac agg atg caa ctc ctg tct tgc att gca cta agt ctt gca ctt	48
21	Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu	
22	1 5 10 15	
23	gtc aca aac agt gca cct act tca agt tct aca aag aaa aca cag cta	96
24	Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu	
25	20 25 30	
26	caa ctg gag cat tta ctg ctg gat tta cag atg att ttg aat gga att	144
27	Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile	
28	35 40 45	
29	aat aat tac aag aat ccc aaa ctc acc agg atg ctc aca ttt aag ttt	192
30	Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe	
31	50 55 60	
32	tac atg ccc aag aag gcc aca gaa ctg aaa cat ctt cag tgt cta gaa	240
33	Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu	
34	65 70 75 80	
35	gaa gaa ctc aaa cct ctg gag gaa gtg cta aat tta gct caa agc aaa	288
36	Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys	
37	85 90 95	
38	aac ttt cac tta aga ccc agg gac tta atc agc aat atc aac gta ata	336
39	Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile	
40	100 105 110	
41	gtt ctg gaa cta aag gga tct gaa aca aca ttc atg tgt gaa tat gct	384
42	Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala	
43	115 120 125	
44	gat gag aca gca acc att gta gaa ttt ctg aac aga tgg att acc ttt	432
45	Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe	
46	130 135 140	
47	tgt caa agc atc atc tca aca ctg act tga	462
48	Cys Gln Ser Ile Ile Ser Thr Leu Thr	

ENTERED

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/149,721

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Input Set : A:\Sequence Listing Mumper et al..txt

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49 145                      150
50 <210> SEQ ID NO: 2
51 <211> LENGTH: 462
52 <212> TYPE: DNA
53 <213> ORGANISM: Artificial Sequence
W--> 54 <220> FEATURE:
55 <221> NAME/KEY: CDS
56 <222> LOCATION: (1)..(462)
57 <223> OTHER INFORMATION: Optimized coding sequence of human IL-2
W--> 58 <400> SEQUENCE: 2
59 atg tac cgc atg cag ctg ctg agc tgc atc gcc ctg agc ctg gcc ctg 48
60 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
61 1                      5                      10                      15
62 gtg acc aac agc gcc ccc acc agc agc agc acc aag aag acc cag ctg 96
63 Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
64                      20                      25                      30
65 cag ctg gag cac ctg ctg ctg gac ctg cag atg atc ctg aac ggc atc 144
66 Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
67                      35                      40                      45
68 aac aac tac aag aac ccc aag ctg acc cgc atg ctg acc ttc aag ttc 192
69 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
70                      50                      55                      60
71 tac atg ccc aag aag gcc acc gag ctg aag cac ctg cag tgc ctg gag 240
72 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
73 65                      70                      75                      80
74 gag gag ctg aag ccc ctg gag gag gtg ctg aac ctg gcc cag agc aag 288
75 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
76                      85                      90                      95
77 aac ttc cac ctg cgc ccc cgc gac ctg atc agc aac atc aac gtg atc 336
78 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
79                      100                     105                     110
80 gtg ctg gag ctg aag ggc agc gag acc acc ttc atg tgc gag tac gcc 384
81 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
82                      115                     120                     125
83 gac gag acc gcc acc atc gtg gag ttc ctg aac cgc tgg atc acc ttc 432
84 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
85                      130                     135                     140
86 tgc cag agc atc atc agc acc ctg acc tga /462
87 Cys Gln Ser Ile Ile Ser Thr Leu Thr
88 145                      150
89 <210> SEQ ID NO: 3
90 <211> LENGTH: 153
91 <212> TYPE: PRT
92 <213> ORGANISM: Homo Sapiens
W--> 93 <220> FEATURE:
94 <223> OTHER INFORMATION: Amino acid sequence of human IL-2
W--> 95 <400> SEQUENCE: 3
96 Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ser Leu Ala Leu
97 1                      5                      10                      15

```

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```

98 Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Gln Leu
99          20          25          30
100 Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu Asn Gly Ile
101          35          40          45
102 Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr Phe Lys Phe
103          50          55          60
104 Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys His Leu Gln Cys Leu Glu
105 65          70          75          80
106 Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala Gln Ser Lys
107          85          90          95
108 Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile Asn Val Ile
109          100          105          110
110 Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys Glu Tyr Ala
111          115          120          125
112 Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp Ile Thr Phe
113          130          135          140
114 Cys Gln Ser Ile Ile Ser Thr Leu Thr
115 145          150

```

## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/149,721

DATE: 06/06/2001

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Input Set : A:\Sequence Listing Mumper et al..txt

Output Set: C:\CRF3\06062001\I149721.raw

L:3 M:283 W: Missing Blank Line separator, <120> field identifier  
L:4 M:283 W: Missing Blank Line separator, <130> field identifier  
L:5 M:283 W: Missing Blank Line separator, <140> field identifier  
L:9 M:283 W: Missing Blank Line separator, <160> field identifier  
L:11 M:283 W: Missing Blank Line separator, <210> field identifier  
L:15 M:283 W: Missing Blank Line separator, <220> field identifier  
L:19 M:283 W: Missing Blank Line separator, <400> field identifier  
L:54 M:283 W: Missing Blank Line separator, <220> field identifier  
L:58 M:283 W: Missing Blank Line separator, <400> field identifier  
L:93 M:283 W: Missing Blank Line separator, <220> field identifier  
L:95 M:283 W: Missing Blank Line separator, <400> field identifier